## REMARKS

**Present Status of the Application**

It has been noted with appreciation that the papers submitted under 35 U.S.C. Section 119(a)-(d) have been received and placed of record in the file.

The Office Action mailed on Jan. 27, 2009 indicated that claims 6-10 are rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement and the enable requirements, and further rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point output and distinctly claim the subject matter which Applicant regards as the invention. The Office Action mailed on Jan. 27, 2009 also indicated that claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pai (US 2004/0075636 A1, hereinafter "Pai") in view of Sunohara (US 2003/0038771 A1, hereinafter "Sunohara") and Chow (US 6,836,149 B2, hereinafter "Chow") and Matsuura (US 5,619,169 A, hereinafter "Matsuura").

In response thereto, Applicant amends claims 6-10 to overcome objections and rejections under 35 U.S.C. 112 and 103(a). Withdrawal of claim rejections is requested respectfully, and allowance of pending claims 6-10 is solicited earnestly.

**Discussion of Claim Rejections under 35 U.S.C. 112**

*Claims 6-10 are rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement and the enable requirements.*

In response thereto, Applicant amends claims 6-10 to overcome objections and rejections under 35 U.S.C. 112, first paragraph.

Now claim 6 is amended as follows:

"6. A cascade driving circuit for a liquid crystal display (LCD), comprising:

a first driving circuit unit, for receiving a differential input signal and generating a first differential data signal for driving the LCD, and a first differential output signal; and

a second driving circuit unit, coupled to the first driving circuit unit, for receiving the first differential output signal and generating a second data signal for driving the LCD;

wherein **the differential input signal after transient is amplified partially in a front part thereof, so as to generate the first differential output signal**." **(Emphasis Added)**

Applicant removes the features "the differential input signal is amplified for a first predetermined period when the differential input signal changes from a high level to a low level, or from the low level to the high level, and the first predetermined period is less than a first period of the differential input signal being in a steady state", and adds the features "the differential input signal after transient is amplified partially in a front part thereof, so as to generate the first differential output signal" in claim 6.

Please refer to Fig. 7 and paragraph [0028], it stated "[T]he differential signal in the figure is amplified by the amplifier in one preferred embodiment of the present invention, and an amplified differential signal 730 is obtained". The description in specification supports the features "the differential input signal is amplified, so as to generated the first differential output signal".

Please refer to FIG. 8 and paragraph [0029], it stated "[W]herein, if the primitive signal after transient is to be amplified partially in its front part, the sensor switches 830 and 850 are turned on whereas the sensor switches 840 and 860 are turned off.". The description in specification supports the features "the differential input signal after transient is amplified partially in a front part thereof". Based on the discussion and explanation set forth, amended claim 6 is supported by the specification, and is complied with the written description requirement and the enable requirements.

Amended claim 7 is recited as follows:

"7. The cascade driving circuit according to 6, wherein the first driving circuit unit comprises:

a first differential receiver, for receiving the differential input signal and transmitting the differential input signal to a first differential transmitter;

the first differential transmitter, coupled to the first differential receiver, for transmitting the differential input signal to a first differential signal amplifier; and

the first differential signal amplifier, coupled to the first differential transmitter, and **the differential input signal after transient is amplified partially in a front part thereof by the first differential signal amplifier.**" **(Emphasis Added)**

Applicant removes the features "he first differential signal amplifier is triggered to amplify the differential input signal for the first predetermined period when the differential input signal changes from a high level to a low level, or from the low level to the high level", and adds the features "the differential input signal after transient is amplified partially in a front part thereof by the first differential signal amplifier" in claim 7.

Please refer to FIG. 8 and paragraph [0029], it stated "[W]herein, if the primitive signal after transient is to be amplified partially in its front part, the sensor switches 830 and 850 are turned on whereas the sensor switches 840 and 860 are turned off.". The description in specification supports the features "the differential input signal after transient is amplified partially in a front part thereof". Based on the discussion and explanation set forth, amended claim 7 is supported by the specification, and is complied with the written description requirement and the enable requirements.

Amended claim 8 is recited as follows:

"8. The cascade driving circuit according to 7, wherein the first differential transmitter comprises:

a first current source; and

a first transistor, a second transistor, a third transistor, and a fourth transistor, wherein a drain of the first transistor and a drain of the second transistor are coupled to the first current source, a source of the first transistor is coupled to a drain of the third transistor and a negative input end of the first differential signal amplifier, a source of the second transistor is coupled to a drain of the fourth transistor and a positive input end of the first differential signal amplifier, and_sources of the third and the fourth transistors are coupled to a ground voltage."

The features "gates of the second and third transistors are coupled to a positive output end of the first differential receiver" and "gates of the first and fourth transistors are coupled to a negative output end of the first differential receiver" in claim 8 are removed. Therefore, Applicant submits that claim 8 is complied with the written description requirement and the enable requirements.

Amended claim 9 is recited as follows:

"9. The cascade driving circuit according to 7, wherein the first differential signal amplifier comprises:

a second current source and a first current source;

a first resistor and a second resistor, a second terminal of the first resistor and a second terminal of the second resistor are coupled to a ground voltage; and

a first sensor switch, a second sensor switch, a third sensor switch, and fourth sensor switch, a first terminal of the first sensor switch and a first terminal of the second

sensor switch are coupled to the first current source, a first terminal of the third sensor switch and a first terminal of the fourth sensor switch are coupled to the second current source, a second terminal of the first sensor switch and a second terminal of the third sensor switch are coupled to a first terminal of the first resistor~~;~~ , and a second terminal of the second sensor switch and a second terminal of the fourth sensor switch are coupled to the a first terminal of the second resistor;

wherein, **the first and third switches are turned and the second the forth switches are turned off when the differential input signal after transient is amplified partially in a front part thereof by the first differential signal amplifier**." **(Emphasis Added)**

Applicant removes the features "a positive out end of the first differential transmitter, and a positive output end of the first differential signal amplifier", "a negative out end of the first differential transmitter, and a negative output end of the first differential signal amplifier", and "the first, second, third, and fourth sensor switches are controlled by whether the input differential signal changes from the high level to the low level, or from the low level to the high level, or the input differential signal is in the steady state", and adds the features "the first and third switches are turned and the second the forth switches are turned off when the differential input signal after transient is amplified partially in a front part thereof by the first differential signal amplifier" in claim 9.

Please refer to FIG. 8 and paragraph [0029], it stated "[W]herein, if the primitive signal after transient is to be amplified partially in its front part, the sensor switches 830 and 850 are turned on whereas the sensor switches 840 and 860 are turned off.". The description in specification supports the features "the first and third switches are turned and the second the forth switches are turned off when the differential input signal after transient is amplified partially in a front part thereof by the first differential signal amplifier". Based on the discussion and explanation set forth, amended claim 9 is supported by the specification, and is complied with the written description requirement and the enable requirements.

Amended claim 10 is recited as follows:

"The cascade driving circuit according to 6, further comprising:

a third driving circuit unit, coupled to the second driving circuit unit;

wherein the second driving circuit unit generates a second differential output signal, the third driving circuit unit receives the second differential output signal and generates a third data signal for driving the LCD; **the first differential output signal after transient is amplified partially in a front part thereof, so as to generate the second differential output signal.**"

Applicant removes the features "the first differential output signal is amplified for a second predetermined period when the first differential output signal changes from a high level to a low level, or from the low level to the high level, the second predetermined period

is less than a second period of the first differential output signal being in the steady state", and adds the features "the first differential output signal after transient is amplified partially in a front part thereof, so as to generate the second differential output signal" in claim 10.

Please refer to Fig. 7 and paragraph [0028], it stated "[T]he differential signal in the figure is amplified by the amplifier in one preferred embodiment of the present invention, and an amplified differential signal 730 is obtained". The description in specification supports the features "the first differential output signal is amplified, so as to generated the second differential output signal".

Please refer to FIG. 8 and paragraph [0029], it stated "[W]herein, if the primitive signal after transient is to be amplified partially in its front part, the sensor switches 830 and 850 are turned on whereas the sensor switches 840 and 860 are turned off.". The description in specification supports the features "the first differential output signal after transient is amplified partially in a front part thereof". Based on the discussion and explanation set forth, amended claim 10 is supported by the specification, and is complied with the written description requirement and the enable requirements.

*Claims 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point output and distinctly claim the subject matter which Applicant regards as the invention.*

After amending claim 6, the word "suitable", and the terms "a first predetermined period", "a high level", and "a low level" are removed. Therefore, Applicant submits that

amended claim 6 is definite for particularly pointing output and distinctly claiming the subject matter which Applicant regards as the invention.

After amending claim 7, the terms "a first predetermined period", "a high level", "a low level", "the high level", and "" are removed. Furthermore, the term "the first driving circuit" in line 1 is amended as "the first driving circuit unit", the term "a first differential transmitter" is lines is amended as "the first differential transmitter". Therefore, Applicant believes that amended claim 7 is definite for particularly pointing output and distinctly claiming the subject matter which Applicant regards as the invention.

After amending claim 9, the terms "second current source" and "third current source" are respectively amended as "first current source" and "second current source", and the term "the input differential signal" is amended as "the differential input signal". Therefore, Applicant believes that amended claim 9 is definite for particularly pointing output and distinctly claiming the subject matter which Applicant regards as the invention.

After amending claim 10, the term "the second driving circuit" is amended as "the second driving circuit unit", and the relation between the second differential output signal and the first differential output signal is added. Furthermore, the terms "a second predetermined period", "a high level", "a low level", "the low level", and "the high level" are removed. Therefore, Applicant believes that amended claim 10 is definite for particularly pointing output and distinctly claiming the subject matter which Applicant regards as the invention.

Accordingly, the rejections of claims 6-10 under 35 U.S.C. 112 are overcome, and allowance of claims 6-10 is solicited earnestly.

**Discussion of Claim Rejections under 35 U.S.C. 103**

*Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pai in view of Sunohara and Chow and Matsuura.*

In response thereto, claim 6 is amended as follows:

"6. A cascade driving circuit for a liquid crystal display (LCD), comprising:

a first driving circuit unit, for receiving a differential input signal and generating a first differential data signal for driving the LCD, and a first differential output signal; and

a second driving circuit unit, coupled to the first driving circuit unit, for receiving the first differential output signal and generating a second data signal for driving the LCD;

wherein **the differential input signal after transient is amplified partially in a front part thereof, so as to generate the first differential output signal.**" **(Emphasis Added)**

The recorded prior art does not disclose the features "**the differential input signal after transient is amplified partially in a front part thereof, so as to generate the first differential output signal**" in claim 6.

In Fig. 3 of Pai, Pai only discloses the first driving circuit unit and the second driving circuit unit, but Pai does not disclose to amplify the differential input signal partially in a front part of the differential input signal after transient.

In Fig. 7 and Fig. 8A of Sunohara, Sunohara only discloses a cascade driving circuit using the differential signal, but Sunohara does not disclose to amplify the differential input signal partially in a front part of the differential input signal after transient.

In Fig. 4 of Chow, Chow only discloses the structure of the first differential transmitter, but Chow does not disclose to amplify the differential input signal partially in a front part of the differential input signal after transient.

In Fig. 1 of Matsuura, Matsurra only discloses part of the structure of the first differential signal amplifier, but Matsurra does not disclose to operate the sensor switches for amplifying the differential input signal partially in a front part of the differential input signal after transient. That is, Matsurra does not disclose or teach the features "the differential input signal after transient is amplified partially in a front part thereof, so as to generate the first differential output signal" in claim 6. Therefore, features of claims 6 are not disclosed or taught by Matsurra.

Based on the discussion and explanation set forth, Applicant submits claim 6 is patentable over the recorded prior, since the recorded prior art does not disclose the features **"the differential input signal after transient is amplified partially in a front part**

**thereof, so as to generate the first differential output signal**" in claim 6. Furthermore, claims 7-10 depend on patentable claim 6, and claims 7-10 are patentable as matter of law.

It is noted that claim 9 is also patentable by the features which are not disclosed or taught by Matsurra. In Fig. 1 of Matsuura, Matsurra only discloses part of the structure of the first differential signal amplifier, but Matsurra does not disclose to operate the sensor switches for amplifying the differential input signal partially in a front part of the differential input signal after transient. That is, Matsurra does not disclose or teach the features "the first and third switches are turned and the second the forth switches are turned off when the differential input signal after transient is amplified partially in a front part thereof by the first differential signal amplifier" in claim 9.

Accordingly, rejections of claims 6-10 under 35 U.S.C. 103(a) are overcome, and allowance of claims 6-10 is solicited earnestly.

## CONCLUSION

For at least the foregoing reasons, it is believed that the presently pending claims 6-10 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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